



Taxonomic Notes on the Korean *Ethmia* (Lepidoptera: Oecophoridae; Ethmiinae)

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Abstract Three *Ethmia* species have been found in new materials from Korea: *Ethmia comitella* Caradja, 1927 (= *Ethmia xanthopleura* Meyrick, 1931, syn. n.; *Ethmia comitella steppella* Dubatolov, Ustjuzhanin & Zintschenko, 1997, syn. n.), *Ethmia septempunctata* (Christoph, 1882), and *Ethmia cirrhocnemis* (Lederer, 1870) found at the Korea–China border. Taxonomic comments and new distribution data of these three species are given, with illustrations of male and female genitalia.

Key words Korea, new records, new synonymies

INTRODUCTION

According to the literature data (Sattler, 1967, Jaros *et al.*, 1992, Shin, Park & Ahn, 1994, Dubatolov, Ustjuzhanin & Zintschenko, 1997), the ethmiine fauna of the Korean peninsula has been represented, by only two species, *Ethmia nigripedella* (Erschoff, 1877) and *E. xanthopleura* Meyrick, 1931, which was described from Korea. This representation was surely lower than the real picture, as by comparison there are nine *Ethmia* species known from Japan and 14 species from Taiwan. This low number refers mostly to the rather poor exploration of the region, especially in the northern part of Korea. In survey of the collections of the Center for Insect Systematics, Kangwon National University, Chuncheon (CIS), the National Institute of Agricultural Science and Technology, Suwon (NIAST), and the University of Incheon (UIB), Incheon, three *Ethmia* species were recognized, and two of them are new to the fauna of Korea. The previously described species from Korea, *E. xanthopleura* Meyrick is synonymized with *E. comitella* Caradja, and *E. nigripedella* (Erschoff), which was reported from N. Korea by Jaros *et al.* (1992), has not been found during this survey. The full list of the specimens recorded and the taxonomic considerations concerning the *E. comitella*–*E. xanthopleura* problem are given in the systematic part of the paper.

Abbreviations: BM (NH)–The Natural History Museum, London, U.K.; CIS–Center for Insect Systematics, Kangwon National University, Chuncheon, Korea; NIAST–National Institute of Agricultural Science and Technology, Suwon, Korea; UIB–University of Incheon, Incheon, Korea; ZSM–Zoologische Staatssammlung, München, Germany; SMTD–Staatliches Museum für Tierkunde, Dresden, Germany; HNHM–Hungarian Natural History Museum, Budapest, Hungary.

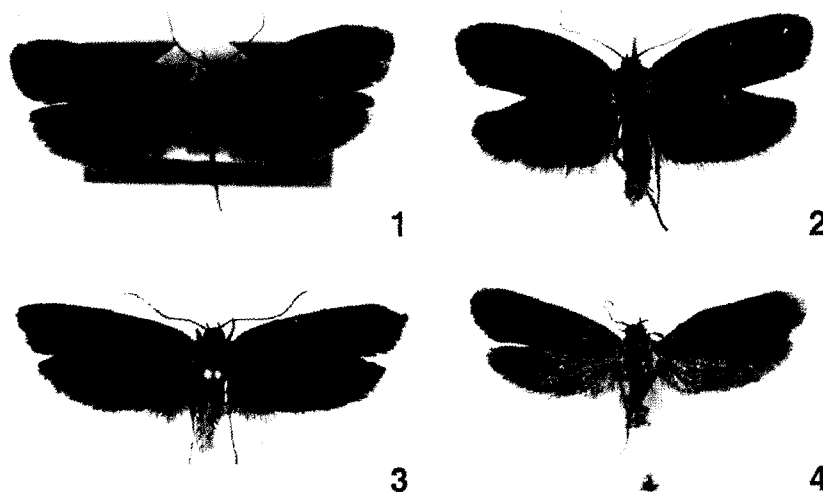
SYSTEMATICS

Ethmia comitella Caradja, 1927

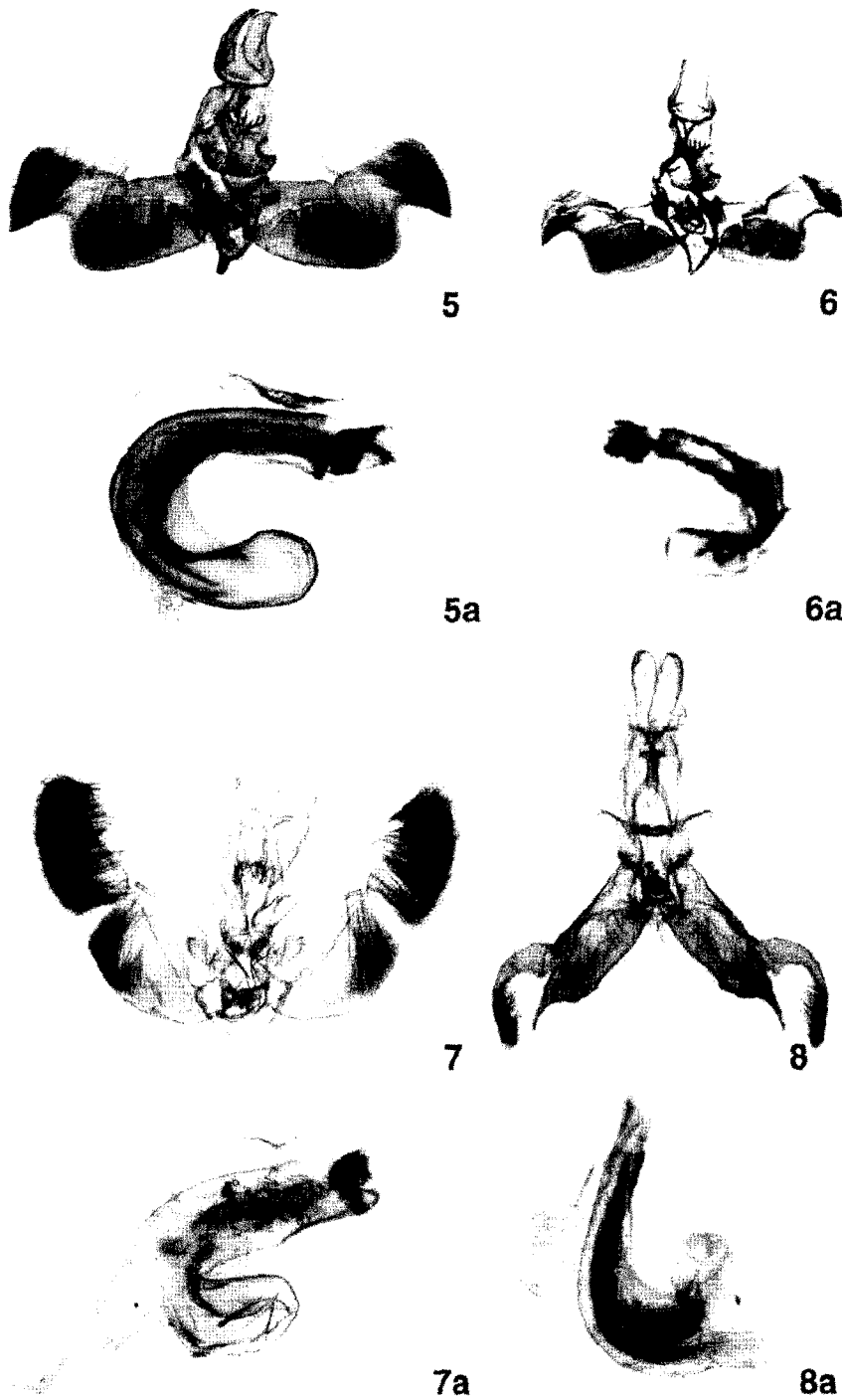
(Figs. 1–2, 5–8)

Ethmia comitella Caradja, 1927. *Memoriile Sectiunii Stiintifice, Academia Romana* (3) 4: 422.*Ethmia xanthopleura* Meyrick, 1931. *Exotic Microlepidoptera* 4: 174, **syn. nov.***Ethmia comitella steppella* Dubatolov, Ustjuzhanin et Zintschenko, 1997. *Atalanta* 28(1/2): 161–171, **syn. nov.**

Doubt on the taxonomic identity of *E. comitella* Caradja and *E. xanthopleura* Meyrick has already been stated by Sattler (1967). He stated that there are no obvious morphological differences between male genitalia of the two type specimens, the lectotype of *comitella* (SMTD) and the holotype of *xanthopleura* (BM(NH)), and also of the general appearance (wingpattern, colouration, etc.) of the two species, which is rather unusual within the genus *Ethmia*. He preserved, however, both taxa, but used the *xanthopleura* name only for the Korean specimens. *E. comitella* Caradja is known from various localities in China while *E. xanthopleura* Meyrick was recorded from Korea and the Russian Far East (Sattler, 1967; Yang, 1977; Liu, 1980; Zhenguo, 1997; Dubatolov, Ustjuzhanin et Zintschenko, 1997). The previously studied Korean material was based on an insufficient material for further detailed studies on variability of the genital and external features. After the examination of the types and the new material from Korea (altogether 15 specimens) a rather continuous range of variation was found in the shape of valva, cucullus, vinculum and the posterior part of the gnathos. In addition, the differences within a given feature are usually slight in this species group and the shape of the curved cucullus and vinculum strongly depends on the mounting of the genitalia. The differences used by Dubatolov *et al.* (1997) in the description of *Ethmia comitella steppella* fit well into the mentioned range of variation of these characters. Therefore, these three taxa are considered here as conspecific, representing the typical



Figs. 1–4. Adults: 1. *Ethmia comitella* Caradja, Paralectotype; 2. *E. comitella* Caradja, Korea, CIS; 3. *I cirrhocnemis* Lederer, Korea, CIS; 4. *E. septempunctata* Christoph, Korea, CIS.



Figs. 5-8. Male genitalia (a: aedeagus): 5. *Ethmia comitella* Caradja, male, Korea, CIS; 6. *E. comitella* Caradja male, Lectotype, GU- 584b Sattler; 7. *E. septempunctata* Christoph, male, Korea, CIS; 8. *E. cirrhocnemi* Lederer, male, Mongolia, HHNM.

subspecies of *E. comitella* (*E. xanthopleura* syn. n.; *E. comitella steppella* syn. n.).

Type material examined. Holotype of *E. xanthopleura* (BM(NH), figured in Clarke, 1965); lectotype (slide GU-584b Sattler) (Fig. 6, male) and paralectotype (slide GU-584c Sattler) (Fig. 9, female) of *E. comitella* (SMTD).

Additional material examined. [Korea]: 5 males– Bongmyung-ri, GW, 5 VI 1995 (KS Yu & JY Yun), gen. prep. no. 240/Kun; Chuncheon, 21 V 1983 (KT Park); Jiam-ri, Chuncheon, 4 VI 1993 (SJ Bang), gen. prep. no. 241/Kun; Gyulam-ri, Jungseon, GW, 5 VI 1996 (JS Lee & YM Park), gen. prep. no. 243/Kun; Mt. Soyo-san, GG, 7 V 1978 (SM Lee), gen. prep. no. 1289/NIAS; 8 females– Dunnae, Hwengsung, GW, 12 V 1992 (KT Park), gen. prep. no. 242/Kun; Mt. Chiak-san, GW, 13 VI 1976 (SM Lee), gen. prep. no. 1315/NIAS; Mahari, Pyungchang, GW, 6 VI 1996 (HK Lee), gen. prep. no. 245/Kun; Mt. Chiak-san, 23 VI 1977 (M. Kuroko), gen. prep. no. 246/Kun; Mt. Cheonma-san, GG, 4 VI 1972 (SM Lee), gen. prep. no. 685/NIAS; Chuncheon, GW, 19 VI 1990 (KT Park & BK Byun); Hongchon, GW, 6 VII 1987 (KS Lee); Mt. Chiak-san, 23 VI 1977; 2 specimens (abdomen missing)– Suwon, GG, 19 VI 1922 (B. Muramatsu)– coll. CIS and NIAS. Two specimens in the SMTD, with decipherable locality written by handwriting.

Distribution. Korea (Central); China: Prov. Sichuan, Shanxi, Xinjiang, vic. of Beijing; Russia: Primorye, East Siberia.

***Ethmia septempunctata* (Christoph, 1882)**

(Figs. 4, 7)

Psecadia septempunctata Christoph, 1882. Bulletin de la Socit Impriale des Naturalistes de Moscou 57: 14.

The species was described from Vladivostok, East Siberia, and its lectotype, according to Sattler (1967), has not been designated yet. Its distribution, based on the new locality data (Dubatolov *et al.*, 1997; Moriuti, 1993), is relatively wide, although restricted to the NE part of the Pacific range: Russia: Primorye, NE China, Japan, and Korea. The taxonomic interpretation of the species is, however, problematic as the different populations from Russia, Japan and Korea (Fig. 4) show differences in forewing colour, pattern, and male genitalia (Fig. 7). The clarification of the taxonomic relationship of these populations requires further studies based on more material, including a revision of the type material.

Material examined. [Korea]: 5 males, Mt. Odae-san, 800 m, GW, 22 V 1989 (KT Park), gen. prep. nos. 234, 235, 239/Kun; 1 female, Mt. Kyebang-san, 26 V 1996 (Bae, Paek & Lee), gen. prep. no. 236/Kun; 1 specimen, Mt. Myeongji-san, Gapyung, GG, 18 VIII 2000 (YS Bae).–coll. CIS, UIB, and NIAS.

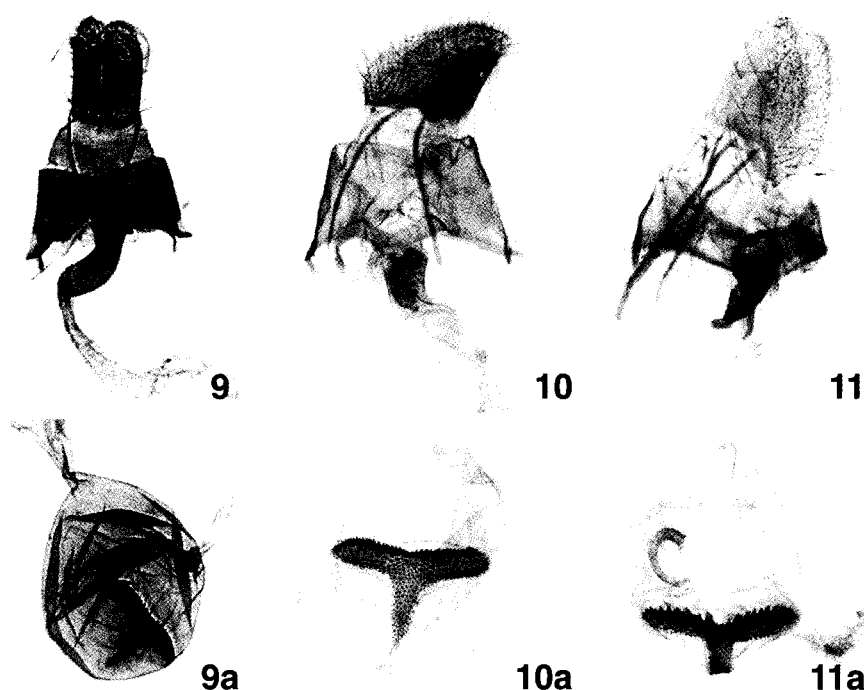
***Ethmia cirrhocnemis* (Lederer, 1870)**

(Figs. 3, 8, 11)

Anesychia cirrhocnemis Lederer, 1870. Horae Societatis Entomologicae Rossicae. 8: 25 (1870), t. 2, f. 13 (1871).

This is the first record of *E. cirrhocnemis* from the Korean peninsula, originating in fact from China (the collecting locality lies on the border between the northern Korea and China, but the material flew over the hills from the Korean side). The distribution range of this species is very wide, extending from Iran and western Russia throughout Turkestan, Kazakhstan, Mongolia and China, occurring almost everywhere in the mountainous regions. A thorough study of the North Korean Lepidoptera fauna will supposedly prove the presence of this species within the Korean peninsula.

Material examined. [China]: 3 females, 8 km W Musan, River Duman, 14 VII 2001 (KT



Figs. 9-11. Female genitalia: 9. *Ethmia comitella* Caradja, female, slide GU-584c Sattler; 10. *E. comitella* Caradja, female, Paralectotype, Korea, CIS; 11. *E. cirrhocnemis* Lederer, female, China, CIS.

Park), gen. prep. no. 244/Kun; Mt. Changbai, Changbeg-hyun, 17 VII 2001 (KT Park)– coll. CIS. [Mongolia]: 2 males, Gobi Aimag, Mts Tost, 42 km WSW Gurt, 2450 m, 43 1111 N, 100 3660 E, 3 VI 1997 (L. Lökös & L. Peregovits), gen. prep. no. 248/Kun; 2 males, Central Aimag, Ulaan Baator, Mts Bogd, Zaisan valley, 1700 m, 47 5148 N, 106 5401 E, 13 VI 1997 (L. Lökös & L. Peregovits); 2 males, South Gobi Aimag, Gurban, 1700 m, 19 VI 1964 & 13 VI 1967 (Z. Kaszab). [Kazakhstan]: 1 male, Prov. Almaty, Zailisky Alatau, 4 km SE Kaskelen, 1000 m, 43 08N, 76 47E, 16 VI 1996 (Gy. Fábíán & L. Nádai)– coll. HNHM.

Distribution. Korea (North), China, Mongolia, Kazakhstan.

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REFERENCES

- Clarke, J.F.G. 1965. Catalogue of the Type specimens of Microlepidoptera in the British Museum (Natural History) described by Edward Meyrick. Vol. 5. pp. 417–438. Trustees of The British Museum (Natural History), London.
- Dubatolov, V.V., P.Y. Ustjuzhanin and V.K. Zintshenko. 1997. A review of the Ethmiidae of the Asian part of Russia and neighbouring territories (Lepidoptera, Ethmiidae). *Atalanta* 28(1/2): 161–171.
- Inoue, H., S. Sugi, H. Kuroko, S. Moriuti and A. Kawabe. 1982. *Moths of Japan*, Kodansha, Tokyo. Vols 1, 2.
- Jaros, J., K. Spitzer, J. Havelka and K.T. Park. 1992. Synecological and biogeographical outlines of Lepidoptera communities in North Korea. *Insecta Koreana*, 9: 78–104.
- Liu, Y. 1980. A study of Chinese *Ethmia* Hbner (Lepidoptera: Ethmiidae) in classification, distribution and numerical taxonomy. *Entomotaxonomia* 2(4): 267–284.
- Park, K.T. 1994. Lepidoptera, Gelechiidae. In Y.H. SHIN *et al.* (eds), *Check List of Insects from Korea*. Kon-Kuk University Press, 744 pp.
- Sattler, K. 1967. Ethmiidae. –Microlepidoptera Palaearctica. Verlag Georg Fromme & Co. Wien. No. 2., Vols. 1, 2. 185 pp.
- Sinev, S. Yu. 1997. Ethmiidae. –Opredelitel' nasekomyh Dal'nego Vostoka SSSR [A key to insects of the Far East of Russia], 5 (1), Nauka, Sankt-Petersburg, pp. 510–514.
- Zhengo, X. 1997. Illustrated description of small moths in Qinghai. Publishing House for China's Agricultural Science, Beijing, 1997: 1–186.
- Yang, C.Z. 1977. Moths of north China (1). Peking Agricultural University, Peking, 1977: 1–299.
- Wang, S. and Z. Zheng. 1997. Two new species and two new records of the genus *Ethmia* Hbner (Lepidoptera: Oecophoridae) from China. *Entomotaxonomia* 19(2): 135–138.
- Zaguljajev, A.K. 1975. Moly-etmidy (Lepidoptera, Ethmiidae) iz Mongolskoj Narodnoj Respubliki. Ethmiidae (Lepidoptera) from the Mongolian Peoples Republic.) – *Nasekomye Mongolii* 3: 342–349.

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